ITW AF/3726

404-035

IN THE UNITED STATES PATENT & TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant: Gilbert W. Younger : Examiner: Marc Jimenez

Title: Method And Systems For Improving The Operation Of Transmissions For Motor Vehicles : Group Art Unit: 3726

Serial No. 10/081,605

Filed: February 21, 2002

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Enclosed for filing please find the following items:

1. Appeal Brief with Appendix of Appealed Claims, in triplicate; and
2. Credit Card Payment Form for filing fee for Appeal Brief at small entity rate.

The enclosed Appeal Brief is being filed within two (2) months of the filing of the Notice of Appeal.

Respectfully submitted,

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8/16/04

MARK P. STONE **(Date of Deposit)**
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APPEAL BRIEF

I. BACKGROUND-

This is an appeal from the final rejection of all pending Claims 1 - 20 made in the Official Action dated July 14, 2004 for the above identified patent application. No claims stand allowed.

Appealed Claims 1 - 20 are reproduced on the attached Appendix.

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II. REAL PARTY IN INTEREST -

The Applicant, Gilbert W. Younger, is the real party in interest. Mr. Younger is President of Transgo, Inc. of El Monte, California.

III. RELATED APPEALS AND INTERFERENCES -

The Applicant and his legal representative are unaware of any other appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the present Appeal.

IV. STATUS OF CLAIMS -

The appealed claims are Claims 1 - 20, which correspond to the claims as originally filed. Each of Claims 1 - 20 has been placed under final rejection in the Official Action dated July 14, 2004. No claims have been allowed, and no claims have been cancelled.

V. STATUS OF AMENDMENTS -

No amendments have been filed subsequent to the final rejection of the claims made in the Official Action dated July 14, 2004.

VI. SUMMARY OF INVENTION -

The appealed claims are directed to a method of modifying the hyrdraulic circuitry of an automotive transmission, and more particularly to the modification of the hydraulic circuitry of an automotive transmission referred to as Model No. 4R100 installed in automobiles manufactured by the Ford Motor Company. The modifications to the "factory installed" automotive transmission result in reducing the time required for a torque converter control valve to be moved into its uppermost position in response to a signal from an electronic control solenoid so as to avoid glazing of the friction material of the converter clutch which occurs in the unmodified "factory installed" transmission. (See Applicant's specification, page 5, first paragraph, Lines 1 - 9; page 11, second paragraph, line 1 through page 12, line 2; page 12, first full paragraph, lines 5 - 14; and page 15, last paragraph, lines 1 - 9). The modifications to the "factory installed" transmission in accordance with the invention also improve the firmness and the feel of the apply of the converter clutch. (See Applicant's specification, page 6, first paragraph, lines 6 - 11; and page 13, first paragraph, lines 5 - 13).

The improvements to the operation of the automotive transmission, as indicated above, result from modifications to the hydraulic circuitry of the "factory installed" automotive transmission as disclosed and claimed by Applicant. In a first

aspect of the invention, the bushing or valve bore for the torque converter control valve 28 of the "factory installed" transmission is replaced by a new and longer bushing or valve bore designated by reference numeral 24. (Page 12, last paragraph, lines 1 - 5 of Applicant's specification, and Figures 3 and 4 of the drawings). The bushing 24 extends over an exhaust passageway 8 of the "factory installed" transmission to cover the exhaust opening, and a smaller diameter opening 26 is defined in the replacement bushing 24 to restrict the size of the larger diameter exhaust opening. (Applicant's specification, page 12, last paragraph, line 5 through page 13, first paragraph, line 3; and Figs. 3 and 4 of the drawings). The result of this modification to the hydraulic circuitry of the "factory installed" transmission is to restrict the flow of fluid through the exhaust 8 of the "factory installed" transmission during application of the converter clutch, which controls the rate of exhaust of converter oil resulting in improvement to the feel and firmness of the application of the converter clutch (Applicant's specification, page 13, lines 5 - 10). The size of the smaller diameter opening 26 in the replacement bushing 24 can be selectively varied to adjust the firmness of the application of the converter clutch, as may be desired (Applicant's specification, page 13, first paragraph, lines 10 - 13).

The modification to the hydraulic circuitry of the "factory installed" transmission discussed above, resulting in improvements to the feel and firmness of the application of the converter clutch, are recited in appealed Claims 4 - 6, 10 - 12, and 17 - 20.

* * *

In a further aspect of the invention disclosed and claimed by Applicant, a balance valve of the "factory installed" transmission, which opposes upward movement of the torque converter control valve 2, is removed. (Applicant's specification page 13, second paragraph, lines 1 - 4). Removal of the balance valve results in less opposition to the upward movement of the torque converter control valve 2 in response to a command signal, thereby resulting in a decrease of the time necessary for the torque converter control valve to complete its upward movement, resulting in a decrease in the time required to apply the torque converter clutch (Applicant's specification, page 13, second paragraph, lines 4 - 10). Reduction in the time necessary for application of the torque converter clutch overcomes disadvantages of the factory installed transmission (Applicant's specification, page 11, last paragraph, and page 15, last paragraph).

Appealed Claims 1 and 7 recite the feature of the invention in which a valve opposing upward movement of the torque converter control valve is removed from the factory installed transmission.

* * *

A further modification to the factory installed transmission, as disclosed and claimed by Applicant, replaces the torque converter control valve 2 of the factory installed transmission with a new valve designated by reference numeral 28 (Applicant's specification, page 13, last paragraph through page 14, lines 1 - 3; and Figures 1, 3 and 4 of the drawings). The torque converter control valve 2 of the factory installed transmission has upper and lower lands of differing diameters, while the replacement torque converter control valve 28 has upper and lower lands of the same diameter. (Applicant's specification, page 14, first paragraph, lines 3 - 6). The elimination of the differential in the diameter of the upper and lower lands of the replacement torque converter control valve 28 tends to stablize the valve during its upward movement, prevents the valve from moving upwardly in the absence of a command signal from the electronic solenoid control. (Applicant's specification, page 14, first paragraph, lines 12 - 17).

Appealed Claims 3, 9, 15, and 16, are directed to methods of modifying a factory installed transmission by replacing a torque converter control valve having upper and lower lands of differing diameters with a torque converter control valve having upper and lower lands of equal diameter.

* * *

A further modification to a factory installed automotive transmission, as disclosed and claimed by Applicant, replaces a return spring of the factory installed transmission with a replacement return spring 30, having a higher tension coefficient than the return spring of the factory installed transmission (Applicant's specification, page 14, last paragraph, lines 1 - 6; and Figs. 3 and 4 of the drawings). The replacement return spring increases the fluid pressure of converter clutch oil applied to a lower converter clutch during the application of the converter clutch, thereby increasing the ability of the converter clutch to hold more quickly, and to hold greater torque (Applicant's specification, page 14, last paragraph, line 3, through page 15, line 4).

Appealed Claims 2, 8, 13 and 14 are directed to methods of modifying the factory installed transmission by removing a return spring opposing upward movement of the torque converter control

spring, and replacing it with a return spring having a greater coefficient of tension.

In summary, the appealed claims are directed to methods of modifying the hydraulic circuitry of a factory installed transmission to result in improved operation and efficiency of the transmission.

VII. ISSUES PRESENTED ON APPEAL -

The issue presented for review is whether Claims 1 - 20 are unpatentable under 35 U.S.C. Section 103(a) over Applicant's admitted prior art (Pages 8 - 11 of Applicant's Specification, and Figs. 1 - 2 of Applicant's drawings) in view of the Younger patent (U.S. Patent No. 5,743,823), the only basis for rejection of the appealed claims in the final action dated July 14, 2004.

VIII. GROUPING OF CLAIMS -

Claims 4 - 6, 10 - 12, and 17 - 20 stand or fall together; Claims 1 and 7 stand or fall together; Claims 3, 9 and 15 - 16 stand or fall together; and Claims 2, 8, 13 and 14 stand or fall together. However, the claims within each of these groups of claims do not stand or fall together with the claims in each of the other groups of claims.

IX. ARGUMENT -

At page 2, paragraph 3 of the Official Action dated July 14, 2004 placing the application under final rejection, pending Claims 1 - 20 have been rejected under 35 U.S.C. Section 103(a) as being obvious over Applicant's admitted prior art in view of the Younger patent (U.S. Patent No. 5,743,823). The admitted prior art is identified in the Official Action as pages 8 - 11 of Applicant's specification and Figs. 1 - 2 of the drawing which describe and illustrate the 4R100 "factory installed" automotive transmission. The claims on appeal are directed to methods of modifying the "factory installed" transmission to improve the operation thereof.

Applicant respectfully submits that there is clearly no teaching or suggestion to combine the Younger patent with the admitted prior art in any manner rendering the claims obvious. Moreover, assuming arguendo that the Younger patent can properly be combined with the admitted prior art, there is clearly no disclosure in the Younger patent itself suggesting the modifications to the "factory installed" transmission as expressly defined by the appealed claims.

Referring to page 3, first full paragraph of the Final Action, the Examiner concedes that the admitted prior art does not teach:

"...modifying the automotive transmission including removing the valve opposing the upward movement of the torque converter control valve, removing the return spring, replacing the return spring with another spring having a greater coefficient of tension, replacing the existing control valve with another control valve having upper and lower lands of substantially equal diameter, and modifying the exhaust opening by replacing the valve bore with a replacement valve bore."

The Final Action continues, at page 3, second full paragraph, by stating:

"Younger teaches that it is known to modify an existing automotive transmission by modifying the automotive transmission (col. 2, lines 18 - 23) including removing the valve opposing the upward movement of the torque converter control valve (col. 4, lines 2 - 3), removing the return spring (col. 4, line 8), replacing the return spring with another spring having greater coefficient of tension (col. 4, line 8) replacing the existing control valve with another control valve (col. 4, line 4), having upper and lower lands of substantially equal diameter (it is inherent that valves come with lands of equal diameter), and modifying the exhaust opening by replacing the valve bore with a replacement valve bore (col. 4, lines 6 - 7).

The Final Action then concludes, at page 3, last paragraph, and page 4, first full paragraph, that it would be obvious to combine the teachings of the Younger patent with the admitted prior art to result in the methods defined by the appealed claims. Applicant respectfully disagrees with this conclusion for the reasons to be discussed as follows.

Pending Claims 1 - 6 are directed to a method of modifying the hydraulic circuitry of an automotive transmission. Claim 1

expressly recites the step of "removing said valve opposing said upward movement of said torque converter control valve"; Claim 2 recites the steps of "removing said return spring opposing upward movement of said torque converter control valve; and replacing said return spring with another return spring having a greater coefficient of tension"; Claim 3 recites the step of "replacing said torque converter control valve with another torque converter control valve having upper and lower lands of substantially equal diameter"; Claim 4 expressly recites the step of "modifying said exhaust to restrict fluid flow through said opening of said exhaust"; Claim 5 expressly recites the steps of "replacing said valve bore with a replacement valve bore, and defining an opening in said replacement valve bore, said opening having a diameter smaller than said predetermined diameter of said opening of said exhaust, said opening in said replacement bore being, at least in part, in axial alignment with said opening of said exhaust to restrict fluid flow through said exhaust"; and Claim 6 recites the step of "modifying the size of said opening defined in said replacement bore for adjusting the flow of fluid through said opening of said exhaust".

Claims 7 - 12 correspond to Claims 1 - 6, and include the same limitations discussed above with respect to Claims 1 - 6. The difference between Claims 1 - 6 and 7 - 12 is that Claims 7 -

12 are directed specifically to modification of a 4R100 automotive transmission.

Claim 13 is directed to a method of modifying the hydraulic circuitry of an automotive transmission and expressly recites the steps of "removing said return spring opposing upward movement of said torque converter control valve; and replacing said return spring with another return spring having a greater coefficient of tension". Claim 14, which is specifically directed to the modification of a 4R100 automotive transmission, contains the same limitations discussed above with respect to Claim 13.

Claim 15 is directed to a method of modifying the hydraulic circuitry of an automotive transmission including the step of "replacing said torque converter control valve with a replacement torque converter control valve having upper and lower lands of substantially equal diameter". Claim 16, which is specifically directed to a method of modifying the hydraulic circuitry of a 4R100 automotive transmission, contains the same limitations as Claim 15.

Claim 17 is directed to a method of modifying the hydraulic circuitry of an automotive transmission including the step of "replacing said valve bore with a replacement valve bore having an opening defined therein; said opening being of a small

diameter than said predetermined diameter of said opening of said exhaust; at least a portion of said smaller opening in said replacement valve bore being in axial alignment with said opening of said exhaust to restrict the flow of fluid between said valve bore and said exhaust". Claim 18 is directed to a method including the step of "modifying the size of said opening in said replacement valve bore to adjust the fluid flow between said valve bore and said exhaust".

Claims 19 - 20, which are specifically directed to a method of modifying the hydraulic circuitry of a 4R100 automotive transmission, include the same limitations in Claims 17 - 18 as discussed above.

Each of Claims 1 - 20 defines a method and positively recites specific steps for implementing the method. As will now be seen from a comparison of the specific method steps recited in the claim and the specific portions of the applied Younger patent relied upon to reject the claims, there is clearly no suggestion in the disclosure of the applied Younger patent to modify the admitted prior art (i.e., the factory installed transmission) in any manner rendering Claims 1 - 20 obvious.

Column 2, lines 18 - 23 of the Younger patent states:

> "It is also desireable to modify the "factory installed" automotive transmission to result in a quick application during upshifts and quick release forces during downshifts

with minimum ratio sharing (overlap) during gear changes, for improved performance particularly when the vehicle is in heavy duty use".

The last paragraph of page 3 of the Final Action relies upon the disclosure of the Younger patent at Column 4, lines 1 - 8 in support of the rejection of Claims 1 - 20. This portion of the Younger patent states:

> "[The modifications to the] original operation and hydraulic circuitry of the "factory installed" automotive transmissions are made by removing structure including original valves, adding structure including new valves, adding new hydraulic circuits to the overall circuitry, discontinuing use of existing circuits by plugging; and modifying the flow through existing hyrdraulic circuitry by enlarging or reducing the size of the fluid flow orifices and adjusting existing spring and pressure values".

The Final Action also relies at page 4, first paragraph, last line, on the Abstract, lines 1 - 4 of the Younger patent which states:

> "Method and systems are provided for improving the operation of a transmission for an automotive vehicle, and in particular the transmission as installed by the original automobile manufacturer...".

It is apparent from each of the sections of the Younger patent quoted above, that the portions of the Younger patent relied upon in the Final Action to reject Claims 1 - 20 are statements of generality which do not teach or suggest the specific method steps expressly recited and defined in each of Claims 1 - 20. Although the statements relied upon from the Younger patent in the Final Action generally describe removing and replacing springs and valves in a factory installed

automotive transmission, none of this disclosure teaches or suggests:

1. the step of removing a valve opposing upward movement of a torque converter control valve, as expressly recited in independent Claims 1 and 7;

2. removing the return spring opposing upward movement of the torque converter control valve, and replacing the return spring with another return spring having a greater coefficient of tension, as expressly recited in Claims 2 and 8;

3. the step of replacing a torque converter control valve with another torque converter control valve having upper and lower lands of substantially equal diameter, as expressly recited in Claims 3 and 9;

4. the step of modifying an exhaust to restrict fluid flow through the opening of an exhaust, as expressly recited in Claims 4 and 10;

5. the steps of replacing a valve bore with a replacement valve bore, and defining an opening in the replacement valve bore, said opening having a diameter smaller than a predetermined diameter in the opening of an exhaust, the opening in the

replacement bore being, at least in part, in axial alignment with the opening of said exhaust to restrict fluid flow through the exhaust, as expressly recited in Claims 5 and 11;

6. the step of modifying the size of the opening defined in the replacement bore for adjusting the flow of fluid through the opening of the exhaust, as expressly recited in Claims 6 and 12;

7. the step of removing a return spring opposing upward movement of a torque converter control valve, and replacing the return spring with another return spring having a greater coefficient of tension, as expressly recited in Claims 13 and 14;

8. the step of replacing a torque converter control valve with a replacement torque converter control valve having upper and lower lands of substantially equal diameter, as expressly recited in Claims 15 and 16;

9. the step of replacing the valve bore with a replacement valve bore having an opening defined therein; the opening being of a smaller diameter than a predetermined diameter of an opening in the exhaust; at least a portion of the smaller opening in the replacement valve bore being in axial alignment with the opening of the exhaust to restrict the flow of fluid between the valve

bore and the exhaust, as expressly recited in Claims 17 and 19; and

10. the step of modifying the size of the opening in the replacement valve bore to adjust the fluid flow between the valve bore and the exhaust, as expressly recited in Claims 18 and 20.

* * *

Applicant further notes that in the Final Action, the Examiner states that: "it is inherent that valves come with lands of equal diameter" (See page 3, second full paragraph of the Final Action). This statement was made with reference to the limitations in Applicant's claims reciting the step of replacing the factory installed torque converter control valve with a replacement torque converter control valve "having upper and lower lands of substantially equal diameter" (Claims 3, 9, 15, 16). Applicant respectfully disagrees with the Examiner's conclusion regarding the diameters of the lands of a valve. Attention is respectfully invited to page 14, first paragraph of Applicant's specification which states, in pertinent part:

> "...In valve 2 of the "factory installed" transmission, the upper and lower lands are of differing diameters to assist upward movement of the valve. Although the elimination of the differential in the diameters of the upper and lower lands of the replacement valve 28 will, to a limited extent, impede upward movement of the valve, this is necessary to compensate for the removal of the "factory installed" balance valve opposing upward movement of the "factory installed" torque converter control valve 2. The

elimination of the differential in diameter of the upper and lower lands of the replacement torque converter control valve 28 in the modified transmission tends to stabilize the valve 28 during its upward movement, and prevents the valve 28 from moving upward too rapidly, or moving upwardly even in the absence of a command signal from the electronic solenoid control."

Applicant therefore submits that the statement in the Final Action that all valves inherently have upper lower lands of equal diameter is incorrect. On the contrary, modification of the original land diameter of the factory installed valve is one of the improvements of Applicant's invention.

* * *

It is axiomatic that in determining the patentability of a claim, the claim must be considered as a whole, and that all positively recited recitations must be considered in the patentability determination. Moreover, references cannot be combined to reject a claim unless there is a suggestion or motivation in the prior art itself to make the combination. See for example, Micro-Chemical, Inc. v. Great Plains Chemical Co., Inc., 41 USPQ 2d 1238 (Fed. Cir. 1997); and In re Fritch, 23 USPQ 2d 1780 (Fed. Cir. 1992). It is improper to selectively combine different portions of different prior art references, using Applicant's own disclosure as a guide for the combination. Orthopedic Equipment Co. v. United States, 217 USPQ 193 (Fed.

Cir. 1983), and In re Fritch, supra. The mere fact that a prior art structure can be modified does not make such a modification obvious unless the prior art itself suggests the desirability of doing so. In re Gordon, 221 USPQ 1125 (Fed. Cir. 1984). The validity of a claim is determined by considering the claim as a whole, and not by considering whether or not each element of the claim existed in the prior art. The claimed invention must be considered as a whole without the benefit of hindsight, and the claims must be considered in their entirety. Casting an invention as a combination of old elements leads improperly to an analysis of the claimed invention by the parts, and not the whole. See, for example, Custom Accessories, Inc. v. Jeffrey-Allan Industries, Inc., 1 USPQ 2d 1196 (Fed. Cir. 1986); Hartness International, Inc. v. Simplimatic Engineering Co., 2 USPQ 2d 1826 (Fed. Cir. 1987); Rockwell International Corp. v. United States, 47 USPQ 2d 1027 (Fed. Cir. 1998).

In the instant case, Applicant's admitted prior art represents the "factory installed" automotive transmission, the starting point for Applicant's claimed invention. The disclosure in the Younger patent relied upon in the Official Action is nothing more than general statements regarding the replacements of valves, springs and other general modifications to "factory installed" automotive transmissions. There is clearly no disclosure in the Younger patent teaching or suggesting the

specific modifications to the "factory installed" transmissions as specifically discussed at pages 11 - 16 of Applicant's specification, and as specifically recited in each of the methods defined by pending Claims 1 - 20. Assuming arguendo that the general disclosure of the Younger patent relied upon in the Official Action could be combined with the admitted prior art (i.e., the "factory installed" automotive transmission) discussed in Applicant's specification and illustrated in Applicant's drawings, there is clearly no suggestion or motivation in the prior art itself to implement the specific modifications to the "factory installed" automotive transmission as expressly defined by independent Claims 1 - 20. The only manner by which the general disclosure of the Younger patent could be modified/combined with the admitted prior art to result in the specific methods defined by the pending claims would be by using the specific disclosure in Applicant's specification as a guide for modifying/combining the "factory installed" automotive transmission and the Younger patent to result in a hindsight reconstruction of the pending claims based upon Applicant's own disclosure. However, as noted above, it is well established that hindsight reconstruction of the claims using an Applicant's own disclosure as a guide for combining/modifying the references to result in the claims is an inappropriate basis for rejection of the claims.

The fact that a factory installed transmission can be modified does not render the modifications obvious where, as in the present application, the prior art does not teach or suggest the methods for modifying the factory installed transmission, as defined by the appealed claims. Therefore, the rejection of the appealed claims made in the Final Action is based only upon broad conclusory statements of unpatentability by the Patent & Trademark Office, unsupported by any evidence of record. Such a rejection is improper. See, for example, In re Dembiczak, 50 USPQ 2d 1614 (Fed. Cir. 1999). Also see, In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002), in which the Court held that factual questions relating to the obviousness inquiry cannot be resolved on subjective belief and unknown authority, nor stand if supported only by conclusory statements. Applicant respectfully submits that in the instant case, the conclusion by the Examiner that it would be obvious to combine the admitted prior art with the Younger patent to result in the appealed claims, is unsupported by any evidence or facts of record, since, as discussed herein, there is no suggestion or motivation in the prior art itself to combine/modify the admitted prior art with the Younger patent to result in the methods for modifying a factory installed transmission, as specifically recited in the appealed claims.

X. CONCLUSION -

Applicant respectfully submits that each of the appealed Claims 1 - 20 is allowable over the prior art applied in the Final Action, and requests that the rejection of the claims made in the Final Action be reversed.

Respectfully submitted,

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APPENDIX OF APPEALED CLAIMS

Claim 1. A method of modifying hydraulic circuitry of an automotive transmission including a torque converter control valve movable within a valve bore between a first predetermined lower position and a second predetermined upper position by the selective application of fluid beneath said torque converter control valve; said hydraulic circuitry including a valve opposing upward movement of said torque converter control valve between said first and second predetermined positions; the steps of said method comprising:

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removing said valve opposing said upward movement of said torque converter control valve.

Claim 2. The method as claimed in Claim 1, wherein said hydraulic circuitry includes a return spring opposing upward movement of said torque converter control valve between said first and second predetermined positions, the steps of said method comprising:

removing said return spring opposing upward movement of said torque converter control valve; and

replacing said return spring with another return spring having a greater coefficient of tension.

Claim 3. The method as claimed in Claim 1, wherein said torque converter control valve includes upper and lower lands of different diameters, the steps of said method comprising:

replacing said torque converter control valve with another torque converter control valve having upper and lower lands of substantially equal diameter.

Claim 4. The method as claimed in Claim 1, wherein said hydraulic circuitry includes an exhaust having an opening of a

predetermined diameter in fluid flow relationship with said valve bore; the steps of said method comprising:

modifying said exhaust to restrict fluid flow through said opening of said exhaust.

Claim 5. The method as claim in Claim 4, wherein the step of modifying said exhaust to restrict fluid flow through said opening of exhaust comprises the steps of:

replacing said valve bore with a replacement valve bore, and

defining an opening in said replacement valve bore, said opening having a diameter smaller than said predetermined diameter of said opening of said exhaust, said opening in said replacement bore being, at least in part, in axial alignment with said opening of said exhaust to restrict fluid flow through said exhaust.

Claim 6. The method as claim in Claim 5, said method comprising the steps of:

modifying the size of said opening defined in said replacement bore for adjusting the flow of fluid through said opening of said exhaust.

Claim 7. A method of modifying hydraulic circuitry of a 4R100 automotive transmission including a torque converter control valve movable within a valve bore between a first predetermined lower position and a second predetermined upper position by the selective application of fluid beneath said torque converter control valve; said hydraulic circuitry including a valve opposing upward movement of said torque converter control valve between said first and second predetermined positions; the steps of said method comprising:

removing said valve opposing said upward movement of said torque converter control valve.

Claim 8. The method as claimed in Claim 7, wherein said hydraulic circuitry includes a return spring opposing upward movement of said torque converter control valve between said first and second predetermined positions, the steps of said method comprising:

removing said return spring opposing upward movement of said torque converter control valve; and

replacing said return spring with another return spring having a greater coefficient of tension.

Claim 9. The method as claimed in Claim 7, wherein said torque converter control valve includes upper and lower lands of different diameters, the steps of said method comprising:

replacing said torque converter control valve with another torque converter control valve having upper and lower lands of substantially equal diameter.

Claim 10. The method as claimed in Claim 7, wherein said hydraulic circuitry includes an exhaust having an opening of a predetermined diameter in fluid flow relationship with said valve bore; the steps of said method comprising:

modifying said exhaust to restrict fluid flow through said opening of said exhaust.

Claim 11. The method as claim in Claim 10, wherein the step of modifying said exhaust to restrict fluid flow through said opening of said exhaust comprises the steps of:

replacing said valve bore with a replacement valve bore, and

defining an opening in said replacement valve bore, said opening having a diameter smaller than said predetermined diameter of said opening of said exhaust, said opening in said replacement bore being, at least in part, in axial alignment with

said opening of said exhaust to restrict fluid flow through said exhaust.

Claim 12. The method as claim in Claim 11, said method comprising the steps of:

modifying the size of said opening defined in said replacement bore for adjusting the flow of fluid through said opening of said exhaust.

Claim 13. A method of modifying the hydraulic circuitry of an automotive transmission having a torque converter control valve movable in a valve bore between a first predetermined lower position and a second predetermined upper position by the selective application of fluid beneath said torque converter control valve, said hydraulic circuitry including a return spring opposing upward movement of said torque converter control valve; the steps of said method comprising:

removing said return spring opposing upward movement of said torque converter control valve; and

replacing said return spring with another return spring having a greater coefficient of tension.

Claim 14. A method of modifying the hydraulic circuitry of a 4R100 automotive transmission having a torque converter control

valve movable in a valve bore between a first predetermined lower position and a second predetermined upper position by the selective application of fluid beneath said torque converter control valve, said hydraulic circuitry including a return spring opposing upward movement of said torque converter control valve; the steps of said method comprising:

removing said return spring opposing upward movement of said torque converter control valve; and

replacing said return spring with another return spring having a greater coefficient of tension.

Claim 15. A method of modifying the hydraulic circuitry of an automotive transmission having a torque converter control valve movable in a valve bore between a first lower predetermined position and a second upper predetermined position by the selective application of fluid beneath said torque converter control valve, said torque converter control valve having upper and lower lands of differing diameter; the steps of said method comprising:

replacing said torque converter control valve with a replacement torque converter control valve having upper and lower lands of substantially equal diameter.

Claim 16. A method of modifying the hydraulic circuitry of a 4R100 automotive transmission having a torque converter control valve movable in a valve bore between a first lower predetermined position and a second upper predetermined position by the selective application of fluid beneath said torque converter control valve, said torque converter control valve having upper and lower lands of differing diameter; the steps of said method comprising:

replacing said torque converter control valve with a replacement torque converter control valve having upper and lower lands of substantially equal diameter.

Claim 17. A method of modifying the hydraulic circuitry of an automotive transmission having a valve movable in a valve bore between a first predetermined lower position and a second predetermined upper position by the selective application of fluid beneath said valve, and an exhaust having an opening of a predetermined diameter coupled in fluid flow relationship with said valve bore; the steps of said method comprising:

replacing said valve bore with a replacement valve bore having an opening defined therein; said opening being of a smaller diameter than said predetermined diameter of said opening of said exhaust; at least a portion of said smaller opening in said replacement valve bore being in axial alignment with said

opening of said exhaust to restrict the flow of fluid between said valve bore and said exhaust.

Claim 18. The method as claimed in Claim 17, the steps of said method comprising:

modifying the size of said opening in said replacement valve bore to adjust the fluid flow between said valve bore and said exhaust.

Claim 19. A method of modifying the hydraulic circuitry of a 4R100 automotive transmission having a torque converter control valve movable in a valve bore between a first predetermined lower position and a second predetermined upper position by the selective application of fluid beneath said torque converter control valve, and an exhaust having an opening of a predetermined diameter coupled in fluid flow relationship with said valve bore; the steps of said method comprising:

replacing said valve bore with a replacement valve bore having an opening defined therein; said opening being of a smaller diameter than said predetermined diameter of said opening of said exhaust; at least a portion of said smaller opening in said replacement valve bore being in axial alignment with said opening of said exhaust to restrict the flow of fluid between said valve bore and said exhaust.

Claim 20. The method as claimed in Claim 19, the steps of said method comprising:

modifying the size of said opening in said replacement valve bore to adjust the fluid flow between said valve bore and said exhaust.